VOLUME 2 - NO. 3 JUNE 1994

The Low Band Monitor

The Great Yucca War of 1994

Temperatures in Colorado have been at record levels during the month of June. Your editor's low band antenna work will have to wait until temperatures drop below the 90 degree mark.

Antenna range maintenance is underway, with the dryer than average conditions making mowing in Elbert County a breeze this year. There is nothing more satisfying than the completion of a grass mowing project.

The big challenge for me has been the elimination of Yucca plants. When I first moved to Colorado on 1986 I was pleased to find these plants on my property. Yucca plants tend to add that special flair to your property that confirms you are not living in the suburbs, but instead are living in the country.

After a few years you find out that Yucca plants tend to thrive in this area and that that nice grouping of six Yucca's in the back yard has become forty-three. The rather attractive 18" - 24" sizes quickly become 36" tall with a footprint over ten square feet.

Last winter I was attacked by Yucca's numerous times while making antenna adjustments in the field. These plants can easily pierce two or three layers of clothing. They generally approach from behind but can come at you from any direction.

I have decided to eradicate these pests from the antenna range this summer before I resume my antenna work and thus far have removed about a two thousand cubic feet of them.

The larger Yucca plants initially require the use of a large pick axe to permit access to the roots with a shovel. Some of the more serious plants have taken over fifteen minutes to extract. This is good exercise, but the shovel/axe action tends to hurt your golf swing's tempo.

Tonga On 160 Meters

Garry, NI6T certainly got the 160 meter adrenaline flowing with the announcement of the A35RK operation by Paul, KK6H. Paul gave many 160 meter enthusiasts a good barometer for receiving antenna performance for a number of mornings on 1.827 mhz.

In Colorado, Charlie, KY0A, was able to connect with Paul on two different mornings. Other locals were obviously not as fortunate.

After four straight sessions of no copy with my vertical or Beverage antenna, I was able to hear A35RK, Q5, for twenty full seconds using a 160 meter dipole at 8". No actual contact was made, but I was certainly encouraged by the results of my experiment.

We could use a few more operations like this one in the summer.

9G1XA 160 Meter Logs

You will find the Randy Martin, 9G1XA, 160 meter logs in this issue. John, K1ER, the QSL manager was kind enough to send me a copy of the log after we received permission to print them from Randy.

It is interesting to note that 9G1XA also worked around 300 different stations during his stay in Ghana. Last month we found out that the 3Y0PI operation also made around 300, 160 meter contacts.

Last year's Trindade operation yielded around 300, 160 meter contacts and I would guess that TI9CF's Cocos Island operation yielded about the same. Is this a coincidence?

Randy's one man operation was recognized as the best of it's kind by the *Southwest Ohio DX Association* at the 1994 Dayton DX Dinner.

Gary Breed, K9AY, deserves a lot of credit for Randy's success as he designed a special compact Inverted L especially for this operation. This antenna was used exclusively on 80 and 160 meters with much success.

Randy also advised that Walt, W0CP's loan of a hypersil transformer for his Alpha 76-PA was a crucial element in this operation.

If Randy returns to Ghana this year he promises to bring the necessary apparatus for a Beverage antenna, as he knows that many people called him that he could not hear.

If you worked 9G1XA on 160 meters you are part of a very elite group of "Top Band" enthusiasts.

Japan Adds A New 80 Meter Window

In case you missed it, Japan's Postal and Communications Services added an additional window to this countries 80 Meter Amateur spectrum, effective May 20, 1994. The new window is 3.747 to 3.754 mhz.

This new window complements the two other JA windows of 3.500 to 3.575 mhz. and 3.791 to 3.805 mhz.

This change will greatly impact DX Contest strategy as stations in the western part of the U.S and Canada will have more opportunity to work Japan due to the additional bandwidth.

The Survey

Please take a few minutes and fill out our first low band survey that is included in this issue. This information will be very useful for both the veteran and beginning low band enthusiast. This survey will also give you a chance to tell our other subscribers how well you did last year.

If you can send me your data by August 15, 1994, I will attempt to have the data tabulated for the September issue.

Power Spots

Under separate cover, I have mailed regular spotting stations a few low band spot cards for future use. Any other subscriber that would like a supply of these cards may receive a supply by simply asking for them.

Any spot is appreciated, particularly those during the doldrums of summer.

The Quantics W9GR DSP Kit

The Darn Thing Works - By KØCS

Editor's Note: Digital Signal Processing technology is a viable method for improving one's ability to hear marginal signals on the low frequency bands. Performance on these units is improving, but price points are also rising to the $300.00 level and higher. This article offers the budget minded amateur an alternative that is very cost effective.

Amateur radio enthusiasts attend the Dayton Hamvention™ for a number of reasons. The opportunity to relate DX experiences with old friends, the chance to learn about emerging technologies, and the ability to be inspired by the accomplishments of other amateurs are just a few of the reasons I attend each year.

The pragmatic amateur goes to Dayton looking for an opportunity to make a good "deal". The Dayton Hamvention™ provides many opportunities for finding a bargain and well it should, with *Stouffers Hotel* rates alone providing enough incentive.

One of the best "deals" I discovered this year was the Quantics - W9GR Digital Signal Processor Kit. This DSP unit was offered in kit form for $125.00. This compares favorably with the $300.00 price point in assembled form.

What Am I Buying? - For $125.00, Dave Hershberger, W9GR, gives you the "Multi-Program" model (the hot setup) that has ten different filters. If you are looking for a dedicated single filter, you can buy his original "Single Function" kit for $90.00. This model can be upgraded later to "Multi-Program" status later for an additional $45.00.

Buy the "Multi-Program" model for $125.00 folks. At $12.50 per filter, it represents extremely good value.

Once you buy the kit, you will need a few additional items: 1. - A speaker input jack. 2. - A speaker output jack. 3. - A headphone output jack. 4. - A DC Voltage input jack. 5. - A volume control knob. 6. - A suitable (metal is recommended) enclosure to house the circuit board.

The enclosure fallback position is the Radio Shack 270-253A cabinet or the GC/ Thorsen 16-143.

I found an elegant enclosure in the flea market for S2.00 and the necessary jacks for another $2.00.

Not A Prototype - This particular DSP System has a good pedigree as it was featured in the September 1992 issue of *QST Magazine* and *QEX Magazine*. This "Multi-Program" kit is an enhanced version, that features the most recent firmware.

The combination of building the kit and reading the original technical articles will really add to your understanding of this technology.

This kit also benefits from improvements that have evolved with the product since 1992 with respect to the physical layout of components.

Building The Kit - The typical enthusiast will enjoy the experience of being exposed to new buzz words like, "Widrow-Hoff LMS Adaptive Filtering Algorithm", BIO switch, and bipolar PROM software.

These terms will really impress your friends if you use them in your daily conversation, but the success or failure of this project will boil down to your ability to solder correctly and follow instructions.

I would think that the average ham should be able to successfully complete this kit if he or she owns a good soldering station. One of the best investments you will ever make in this hobby is to buy a professional grade soldering station. I bought a *Weller WTCP Series* station a few years ago for what I thought was a lot of money. It has returned the original expense a hundred fold.

W9GR provides detailed instructions that are well written and logical. He does not provide you with the lavish drawings our friends from Benton Harbor, Michigan use to provide. He correctly advises that this is not a kit for beginners.

Let's Build It Anyway - You begin the process of building the W9GR kit by first identifying your components. This is a simple process, but I would recommend that you find a nice 6" x 6" piece of Styrofoam for sorting all of the common resistors together. Don't worry about values, just make sure that you have the common color codes grouped together.

W9GR provides you with plenty of information, R1 - 100K ohms (brown-black-yellow-gold) so it is hard to make a mistake.

The component insertion process starts with the resistors and progresses as component height is increased.

For your first session I would recommend doing nothing more than reading the instructions, laying out the components and then soldering in the thirty-three fixed resistors.

This will give you an opportunity to interrupt the project with a sense of accomplishment and allow you a chance to review the instructions again before moving on to Phase Two.

Phase Two - You will encounter some components (diodes and electrolytic capacitors) that require adherence to component polarity. The IC sockets probably require the most attention to detail. The 20 pin right angle IC socket also requires some care (use outer two rows) but in general you will find the board assembly to be straightforward.

When wiring your jacks, switches and volume control to the board try to allow for some additional wire length so that you can adapt your control orientation later. You may want your headphone jack at the front of the enclosure and the speaker jack at the back. Provide yourself with enough lead length so the best orientation can be achieved.

Phase Three - After the components have been soldered to the board W9GR asks you to "smoke test" the board before you install the IC's. This is a very crucial step, so be sure that you do not miss it.

When I applied voltage to my board I watched in horror as an electrolytic capacitor puffed up like a popcorn kernel. I quickly killed the voltage and found that I had inserted not just one, but all electrolytic capacitors into the board with the wrong polarity!

Yes readers, your editor screwed up badly. These are the moments in the hobby where a good junk drawer comes in handy. Would you believe I had new computer grade electrolytics on hand and except for color no one would ever know of my terrible mistake.

"It's not your mistakes, but your recoveries"; with solder sucker in one hand and the *Weller* in the other I quickly removed all five of the electrolytics that sacrificed their lives for this project and correctly inserted the replacements.

Phase Four - When you pass the "smoke test", that I now will remember for the rest of my life, you begin the not so trivial process of inserting the IC's into the sockets. I had two IC insertion tools that worked well, but one of the IC's is the "skinny DIP" style that required the rather cumbersome "hand insertion" method.

The LED Bar Graph that goes in the right angle socket does not have a definitive method for obtaining the proper orientation (mine was blank the first time I turned it on) due to various vendor standards. When facing the front of the unit my LED has a "nick" in the lower left corner, which was the correct orientation.

I connected my receiver audio and external speaker to the unit and, after turn on, had success with the unit in the default mode of "Program #1" only. Thinking that I had misread the instructions, I tried the the BIO and Reset switches again and still could only use "Program #1".

Rereading step #2 of the instructions carefully, I found that I had skipped the step related to a small jumper required for the "Multi-Program" chip. This could have easily been remedied (I am nit picking) if W9GR had used a carriage return and new paragraph at this point, as I thought the context of the instruction was for "Single Function" units only.

After wiring the jumper, my BIO switch now worked correctly and I could select any of the ten different filtering programs.

Yes, after inserting the LED bargraph backwards, reversing all of the electrolytics, and neglecting to wire a jumper, but being able to diagnose and correct my errors quickly, I was ready to install a working Multi-Program W9GR DSP into an enclosure. Damn I'm good!

I feel that this rather adventurous but successful kit assembly is a credit to a good forgiving design. Bravo W9GR!

If you are really having a bad kit building day W9GR offers a "Warranty Repair" service that works as follows. You send W9GR $40.00 and the non-working unit. He repairs the unit and keeps the $40.00 if the problem is "cockpit error", such as bad soldering or improper IC insertion. If defective parts or PC board flaws are the culprit he corrects the problem and returns your money.

So the penalty for really screwing up is $40.00. To date he has encountered only one unit that was not made defective by "cockpit error".

This seems to be a fair policy. The W9GR DSP Kit also provides us with an idea why there is basically no consumer electronics assembly remaining in North America.

Adding the Enclosure - Your enclosure will obviously require some drilling. There are three switches, one volume control, one Bar Graph Display and four Jacks. Always wear eye protection when working with power tools. The first step in the process will be the careful alignment of the Bar Graph LED with the enclosure.

The Bar Graph LED will require a small rectangular opening at the front of the enclosure. This is the most challenging aspect of the enclosure phase of the project and once completed, will set up the location of the PC board spacer holes and various control orientations.

I would suggest that you remove the Display LED from it's socket (remember the correct orientation) and carefully outline the perimeter on the front of your enclosure.

Ambitious enthusiasts might want to integrate the DSP board onto an existing enclosure, such as a speaker enclosure. The choice is yours.

Navigating with the Multi-Program W9GR DSP - Operating the W9GR DSP is really fun. At turn on the Display LED will progress at one second intervals from left to right from Program #1, to Program #2, Program #3 and Etc. until each of the ten LED's have been energized.

A tone will be heard as each of the ten programs is encountered.

After passing Program #10, the unit will return to Program#1, the default program, and then the Display LED becomes a digital style audio output indicator, similar to the RF output LED's used on recent ETO Alpha Amplifiers.

This LED Display immediately sets you up for receiver audio adjustments, as a full scale reading is obviously too much audio.

To use one of the other programs you simply press the reset button, which starts the one second progression again and then flip the BIO switch when the desired program is encountered. You can also toggle the BIO switch at the initial turn on to select the desired program.

It is important to note that the BIO switch will have a different function depending on the particular program selection. If Program #1, the Denoiser/Notcher has been selected, the BIO Switch will Denoise in the "0" position and Notch in the "1" position.

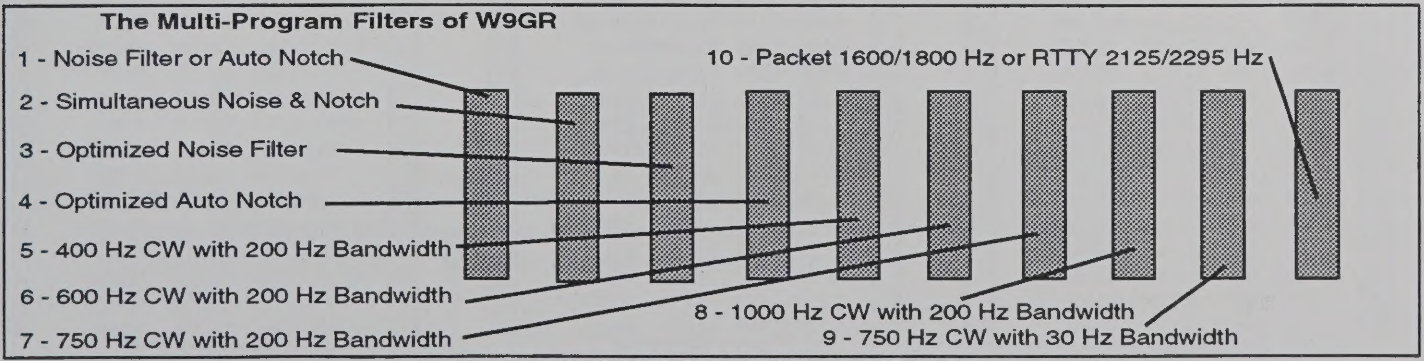
If Program #5, the 400 hz. Linear Phase CW Filter is selected, the BIO Switch will utilize the filter in "1" position, but bypass the filter in the "0" position, thus allowing the user to momentarily tune outside the narrow bandpass. This scheme also applies to CW Filter Programs 6 - 9.

Program #10, if selected is an HF Packet or RTTY bandpass filter. The BIO Switch selects the Packet Tones if the "0" position is selected and the RTTY tones if the "1" is selected.

Performance - This is an excellent DSP unit. The low band operator will occasionally come across a weak signal situation where Program #3 the Optimized Denoise Filter or one of the CW Filters might make the difference between a successful contact or a "Sorry - Not In Log".

Owners that operate moonbounce will find Program #9, a 750 hz. Linear Phase Ultra Narrow (30 hz. bandwidth) CW Filter to be useful.

The W9GR Multi-Program DSP Kit is available from, *QUANTICS*, P.O. Box 2163, Nevada City, California 95959. The cost is $125.00 with an additional $7.00 for shipping and handling. California residents add 7.25% sales tax. Orders outside the U.S. and Canada add $20.00 for Air Mail Postage.



The Multi-Program Filters of W9GR

1 - Noise Filter or Auto Notch
2 - Simultaneous Noise & Notch
3 - Optimized Noise Filter
4 - Optimized Auto Notch
5 - 400 Hz CW with 200 Hz Bandwidth
6 - 600 Hz CW with 200 Hz Bandwidth
7 - 750 Hz CW with 200 Hz Bandwidth
8 - 1000 Hz CW with 200 Hz Bandwidth
9 - 750 Hz CW with 30 Hz Bandwidth
10 - Packet 1600/1800 Hz or RTTY 2125/2295 Hz

9G1XA 160 METER LOGS

Thanks Randy, KØEU and John, K1ER

```
8/27/1993 22:07  OZ1LO
8/27/1993 22:08  RC2CR
8/27/1993 22:10  DF0WE
8/27/1993 22:10  UA6AAY
8/27/1993 22:11  RB5BA
8/27/1993 22:12  OH3SR
8/27/1993 22:12  UZ6HW
8/27/1993 22:13  SM5BFJ
8/27/1993 22:14  ON4UN
8/27/1993 22:16  9A2TW
8/27/1993 22:18  OH6VR
8/27/1993 22:21  UB5BAN
8/27/1993 22:22  OZ7YY
8/27/1993 22:23  OH1VB
8/27/1993 22:24  SM0AJU
8/27/1993 22:25  OH2BU
8/27/1993 22:26  SV8ZS
8/27/1993 22:27  SM5AKT
8/27/1993 22:29  PA3DJY
8/27/1993 22:29  UA3PVX
8/27/1993 22:31  RB5BE
8/27/1993 22:33  SL0ZG
8/27/1993 22:35  OZ7Z
8/27/1993 22:36  OK1DXS
8/27/1993 22:37  SM5OE
8/27/1993 22:37  SM6MCW
8/27/1993 22:38  9A2TW
8/27/1993 22:39  SM3RXC
8/27/1993 22:40  SM3JLA
8/27/1993 22:41  SK5CR/5
8/27/1993 22:42  UA3NCN
8/27/1993 22:43  OZ7JZ
8/27/1993 22:46  SM5AKT
8/27/1993 22:47  SM3CVM
8/27/1993 22:48  SM3GQP
8/27/1993 22:48  SV8ZS
8/27/1993 22:50  OZ1ING
8/27/1993 22:52  DK7SU
8/27/1993 22:52  SM0DJZ
8/27/1993 22:55  G3PQA
8/27/1993 22:56  SP3IOE
8/27/1993 22:57  OM3PC
8/28/1993 05:37  W1OO
8/28/1993 05:39  K1ZM
8/28/1993 05:42  W0CD
8/28/1993 05:43  W8UVZ
8/28/1993 05:46  W2OKM
8/28/1993 05:48  K8GG
8/28/1993 05:51  K2EK
8/28/1993 05:57  AA1K
8/28/1993 22:14  DL8AN
8/28/1993 22:15  DL1YD
8/28/1993 22:16  DL0RE
8/28/1993 22:16  G3RBP
8/28/1993 22:17  DL3SZ
8/28/1993 22:19  G3LNS
8/28/1993 22:20  OM3KFO
8/28/1993 22:23  ON5NT
8/28/1993 22:28  OM3TZM
8/28/1993 22:33  SM3GSK
8/28/1993 22:36  9A2TW
8/28/1993 22:37  DJ6RX
8/28/1993 22:40  OM3IQ
8/28/1993 22:43  OM3CZN
8/28/1993 22:46  OM3TNU
8/28/1993 22:49  OM3TIQ
8/29/1993 02:47  W1JZ
8/29/1993 02:50  N4WW
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COLUMN 1 OF 6

```
8/29/1993 02:51  W3BGN
8/29/1993 02:52  K1KI
8/29/1993 02:52  VE1ZZ
8/29/1993 02:53  K1MEM
8/29/1993 02:54  N4TO
8/29/1993 02:54  W1JR
8/29/1993 02:55  YL1XX
8/29/1993 02:56  W1NG
8/29/1993 02:58  NT1P
8/29/1993 03:00  RA3DX
8/29/1993 03:02  NA2M
8/29/1993 05:10  K1JO
8/29/1993 05:11  W2WO
8/29/1993 05:14  W2SM
8/29/1993 05:16  K2CL
8/29/1993 05:19  K2TQC
8/29/1993 05:22  K1MM
8/29/1993 05:25  W2BXA
8/29/1993 05:26  VE3DO
8/29/1993 05:28  K3ANS
8/29/1993 05:36  K9RJ
8/29/1993 05:37  AD1G
8/29/1993 05:43  NA2M
8/29/1993 05:49  KP2A
8/31/1993 00:10  VE1ZZ
8/31/1993 00:14  W1ZE
8/31/1993 00:25  VE1DWX
8/31/1993 00:29  N1CPC
8/31/1993 00:34  NO1G
8/31/1993 05:40  W2FCR
8/31/1993 05:47  WA2UUK
8/31/1993 22:03  SM3CXS
8/31/1993 22:11  SM3CVM
9/02/1993 21:58  OH1XX
9/02/1993 21:59  G4BWP
9/02/1993 22:02  G4GIR
9/02/1993 22:03  OH2WI
9/02/1993 22:03  ON4ACG
9/02/1993 22:11  OZ2RH
9/02/1993 22:18  OH1XX•
9/02/1993 22:21  GI3OQR
9/02/1993 22:22  OM3CQR
9/02/1993 22:26  OK1DWJ
9/02/1993 23:01  LA6MT
9/02/1993 23:03  OH1TN
9/02/1993 23:10  G3KMA
9/02/1993 23:14  OK1DOT
9/02/1993 23:15  SM5OE
9/02/1993 23:17  SM5JE
9/02/1993 23:54  G3XTT
9/05/1993 01:04  K1BW
9/05/1993 01:05  K9AB
9/05/1993 01:05  WB9Z
9/05/1993 01:06  W3GH
9/05/1993 01:06  W9ZR
9/05/1993 01:07  OH1MA
9/05/1993 01:07  W1ZE
9/05/1993 01:08  K3UA
9/05/1993 01:08  N4SU
9/05/1993 01:09  KF8XL
9/05/1993 01:09  KR2Q
9/05/1993 01:10  K8YSE
9/05/1993 01:10  WB2P
9/05/1993 01:11  W9EVI
9/05/1993 01:12  K1JO
9/05/1993 01:12  WT3Q
9/05/1993 01:13  KA1PE
9/05/1993 01:13  W0ZV
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COLUMN 2 OF 6

```
9/05/1993 01:14  WA3EUL
9/05/1993 01:15  KD9SV
9/05/1993 01:15  KZ3H
9/05/1993 01:17  KM1H
9/05/1993 01:18  EI5HJ
9/05/1993 01:18  K5UR
9/05/1993 01:18  VE3EJ
9/05/1993 01:19  K1ST
9/05/1993 01:19  W9MAF
9/05/1993 01:20  VE3UDX
9/05/1993 01:21  W4MGN
9/05/1993 01:21  W9XR
9/05/1993 01:22  KE9A
9/05/1993 01:23  KX3Q
9/05/1993 01:24  K8MFO
9/05/1993 01:24  KW2P
9/05/1993 01:25  W4DR
9/05/1993 01:26  K8IP
9/05/1993 01:28  K9UKP
9/05/1993 01:29  N0XA
9/05/1993 01:29  W3RCQ
9/05/1993 01:30  K2SG
9/05/1993 01:32  K9UWA
9/05/1993 01:35  N2LT
9/05/1993 01:35  W2SM
9/05/1993 01:36  W2FCR
9/05/1993 01:36  WA1WMS
9/05/1993 01:37  W1YY
9/05/1993 01:38  K3OO
9/05/1993 01:38  KU2A
9/05/1993 01:39  K2TQC
9/05/1993 01:39  KR2O
9/05/1993 01:40  W2BHM
9/05/1993 01:41  KF2O
9/05/1993 01:41  W2OKM
9/05/1993 01:42  K3ND
9/05/1993 01:43  KR9U
9/05/1993 01:47  KK2I
9/05/1993 01:48  NK4J
9/05/1993 01:49  N4VZ
9/05/1993 01:50  LA6MP
9/05/1993 01:50  SM4DDE
9/05/1993 01:52  W2TQC
9/05/1993 01:52  WB4DBB
9/05/1993 01:53  KA9LTR
9/05/1993 01:56  K4UEE
9/05/1993 01:58  VO1NA
9/05/1993 01:59  W8JGU
9/05/1993 02:00  K9AJ
9/05/1993 02:01  K3WW
9/05/1993 02:03  WD9NFN
9/05/1993 02:04  K4PI
9/05/1993 02:05  K2POF
9/05/1993 02:07  W1NG
9/05/1993 02:08  NF2L
9/05/1993 02:09  KA9A
9/05/1993 02:10  VE1UK
9/05/1993 02:11  W2FP
9/05/1993 02:12  N8CC
9/05/1993 02:13  N4VZ
9/05/1993 02:13  W1EYT
9/05/1993 02:14  W1ZK
9/05/1993 02:15  W4YV
9/05/1993 02:16  WA4CTA
9/05/1993 02:17  K2UO
9/05/1993 02:17  VE3KP
9/05/1993 02:19  UW3PZ
9/05/1993 02:20  WS9V
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COLUMN 3 OF 6

9G1XA 160 METER LOGS

```
9/05/1993 02:23  KC1XX
9/05/1993 02:23  W8UCI
9/05/1993 02:25  W2REH
9/05/1993 02:25  W8DF
9/05/1993 02:26  W2TA
9/05/1993 02:27  W8XD
9/05/1993 02:28  W4OWJ
9/05/1993 02:32  NA2M
9/05/1993 02:36  4X4NJ
9/05/1993 02:38  N2NFG
9/05/1993 02:39  KE3Q
9/05/1993 02:39  W1FV
9/05/1993 22:06  F6BKI
9/05/1993 22:07  OM3TKW
9/06/1993 23:05  DJ9KG
9/10/1993 00:19  N4KG
9/10/1993 00:21  K5NA
9/10/1993 00:21  K8OQL
9/10/1993 00:24  AA4V
9/10/1993 00:25  VE1YX
9/10/1993 00:26  W8AH
9/10/1993 00:31  KU2Q
9/10/1993 00:32  KK0U
9/10/1993 00:35  K1NLQ
9/10/1993 00:38  W9YSX
9/10/1993 00:40  VE3HO
9/10/1993 00:41  VE3ICR
9/10/1993 00:42  VE3XN
9/10/1993 00:44  VE1CX
9/10/1993 00:45  VE1YX
9/10/1993 00:48  K2CL
9/10/1993 00:51  W1CKA
9/10/1993 00:55  K4ODL
9/10/1993 00:58  NX1G
9/10/1993 00:59  N9RD
9/10/1993 01:03  WB9YXY
9/10/1993 23:40  4Z4DX
9/10/1993 23:43  4Z5DX
9/11/1993 01:03  K4ODL
9/11/1993 01:04  NI0F
9/11/1993 01:06  KY0A
9/11/1993 01:08  NA0Y
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COLUMN 4 OF 6

```
9/11/1993 01:08  W5CZ
9/11/1993 01:09  KX4R
9/11/1993 01:11  W4MGN
9/11/1993 01:14  N4JJ
9/11/1993 01:16  W0RI
9/11/1993 01:18  W4NL
9/11/1993 01:23  WA6CTA
9/11/1993 01:24  W3UM
9/11/1993 01:27  K4PB
9/12/1993 01:05  KV0Q
9/12/1993 01:26  KJ9I
9/12/1993 01:32  K9FD
9/13/1993 22:35  SM6CTQ
9/13/1993 22:37  OE5NNN
9/13/1993 22:41  SM6MCW
9/14/1993 00:06  KB0G
9/14/1993 23:05  I2FUG
9/15/1993 00:06  WW2Y
9/15/1993 00:08  W1CKA
9/15/1993 00:09  VE1YX
9/18/1993 23:42  OM3TDP
9/19/1993 00:32  VP2VI
9/19/1993 00:34  KZ3H
9/19/1993 00:37  K2VV
9/19/1993 00:39  W1CKA
9/19/1993 00:40  W3RCQ
9/19/1993 00:46  W2JB
9/19/1993 00:48  W0ZV
9/19/1993 00:49  W1RR
9/19/1993 00:52  VP2VA
9/19/1993 01:02  W4MYA
9/20/1993 22:36  DL1SDN
9/20/1993 22:37  DK6ED
9/20/1993 22:38  SM6OLL
9/20/1993 22:39  G4DBN
9/20/1993 22:39  ON6TT
9/20/1993 22:40  GM3ITN
9/20/1993 22:41  GI0KOW
9/20/1993 22:41  IK7MCJ
9/20/1993 22:44  DL1EJW
9/20/1993 22:45  G3MXJ
9/20/1993 22:45  OZ1BTE
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COLUMN 5 OF 6

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9/20/1993 22:47  EI5HJ
9/20/1993 22:48  DJ1RL
9/20/1993 22:48  OZ8ABE
9/20/1993 22:48  UA9YQB
9/20/1993 22:51  OZ1HJX
9/20/1993 22:53  OZ1DPR•
9/20/1993 22:53  OZ3PZ
9/20/1993 22:54  G3KMA
9/20/1993 22:54  OZ3SK
9/20/1993 22:56  DL1SDN
9/20/1993 22:57  GI0KOW
9/20/1993 22:59  W1ZE
9/20/1993 23:00  DJ2TI
9/20/1993 23:00  PA0LEG
9/20/1993 23:02  DL0ZB
9/20/1993 23:02  PA3FFJ
9/20/1993 23:03  DL5ARX
9/20/1993 23:03  PI4DEC
9/20/1993 23:05  SM6DHU
9/20/1993 23:06  VO1NA
9/20/1993 23:10  SM3EVR
9/20/1993 23:12  DJ7RD
9/20/1993 23:13  OZ1CTK
9/20/1993 23:14  UA3ZOV
9/20/1993 23:15  OK1AMB
9/20/1993 23:17  OZ1HJX
9/20/1993 23:19  GM0RHP
9/20/1993 23:20  RV3VW
9/20/1993 23:21  UA4PPR
9/20/1993 23:22  SM3EVR
9/20/1993 23:57  WA4VKD
9/21/1993 04:00  W0ZV
9/21/1993 04:02  W3GH
9/21/1993 04:10  SM5BFJ
9/21/1993 04:12  W0OQK
9/21/1993 04:12  WA3EUL
9/21/1993 04:15  N6SS
9/21/1993 04:15  SM7BIC
9/21/1993 04:16  NQ8S
9/21/1993 04:20  W3RCQ
9/21/1993 23:31  I8UDB•
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COLUMN 6 OF 6

CONTINENT	QSO
N. AMERICA	192
S. AMERICA	0
ASIA	4
AFRICA	0
OCEANIA	0
EUROPE	133
TOTAL	329

N. AMERICA	QSO
W1	35
W2	38
W3	20
W4	25
W5	03
W6	02
W7	00
W8	14
W9	22
W0	13
VE	17
OTHER	03
TOTAL	192

DATE	QSO
8-27	42
8-28	24
8-29	26
8-31	09
9-02	17
9-05	100
9-06	01
9-10	23
9-11	13
9-12	03
9-13	03
9-14	02
9-15	03
9-18	01
9-19	10
9-20	42
9-21	10
TOTAL	329

NOTE: This breakdown makes no effort to identify specific call districts for stations that have prefixes outside of their district. A (•) denotes a SSB contact. All other contacts were made in the CW mode.

First Annual Low Band Survey

A Checkpoint For The Coming Season

When the *Low Band Monitor* was first initiated in April of 1993 the concept of a Low Band Order of Merit was discussed by the editor. This was to be an annual listing of subscribers low band achievements that would provide a look at worldwide activity by our readers. Thanks to the cooperation of our subscribers, we are now in a position to proceed with the first listing. Lets discuss our general philosophy.

Why Do We Do This - This annual listing, scheduled for the September Issue, will provide our readers with some real insight about what has happened on the 40, 80 and 160 meter bands. This information will identify many of the players of this challenging pursuit and provide us with a framework for comparing future achievements.

This listing will not only be geared to all time low band achievements, but will make an effort to identify seasonal and individual achievements of the past recent defined operating period. Selected DXpeditions will also be used to gage selected station performance.

The DXpedition study will actually give us method for evaluating an operations relative effectiveness on the low bands.

Specific station information will be also be requested that will include transceiver type, latitude & longitude, elevation above sea level, transmit antenna, receive antenna and estimated number of operating sessions per season.

The Basic Mechanics - A survey form follows that you can photocopy and return to the *Low Band Monitor* for listing. Only current *Low Band Monitor* subscribers are eligible for inclusion on this listing. Subscribers are encouraged to return this form as soon as possible.

General Station Data - Most subscribers will have no problem filling out the survey form. Let's review each *General* data field:

- STATION CALL - This one requires no comment.
- LATITUDE & LONGITUDE - To nearest degree. Example: N40-W100
- ELEVATION - Feet Above Sea Level. Example: 6,550 ft.
- TRANSCEIVER - Your #1 Radio. Example: Icom-765
- TRANSMIT ANTENNA - This will be a coded exercise by band. The antenna type will be coded followed by the height above ground. Example: Y2-125, V4-65, V1-115. On 40, 80, and 160 meters respectively this station has a 2 Element Yagi at 125', a Four Element Vertical at 65', and a Single Vertical at 115'.
- RECEIVE ANTENNA - A similar coded concept by individual band with additional classes for Loops, Beverages and Hybrids. Example: Y2-125, P8-4, and P8-4. On 40, 80 and 160 meters respectively this station has a 2 Element Yagi at 125', an 800' Beverage at 4', and another 800' Beverage at 4' elevation.
- OPERATING SESSIONS - This is a rough measurement of your low band operating time during the defined period. The period September 15, 1993 to April 15, 1994. Example: 108 Days.

CounterPoint
We don't need no stinking survey man!

Recent Achievements - As you can see the *General* fields relate to survey type of information that shouldn't present you with much difficulty. Lets look at the *Recent Achievements* fields during the reporting period, defined as September 15, 1993 to April 15, 1994.

- NEW COUNTRIES WORKED - By band, how many all time new countries did you work during this period? Example: 11-09-07. This would indicate that this station worked 11 new 40 meter countries, 9 new 80 meter countries, and 7 new 160 meter countries during the reporting period.
- SELECTED DXPEDITIONS WORKED - Certain operations tend to define ones low band season. For this reporting period we will use the following ten operations that occurred during this recently concluded season.

3Y0PI - Peter I Island
9G1XA - Ghana
ZD9SXW - Tristan Da Cunha
VK9MM - Mellish Reef
TI9CF - Cocos Island
V51Z - Namibia
ZS9Z - Walvis Bay
JW5NM - Jan Mayen
T30CC - West Kirabati
VQ9SS - Chagos Island

Simply mark the band you worked each of these operations.

All Time Achievements - The final fields will be called *All Time Achievements*. For this we will use the DXCC all time countries list and will include deleted countries. Some of our readers have commented that to include deleted countries will bias the results in favor of the older operator. Be advised that older operators also have a greater chance of joining the ranks of the Silent Keys, so it tends to average out!

- ALLTIME COUNTRIES WORKED - This is pretty basic information for most of us. A number like 211-173-104 would indicate a 40 meter total of 211, an 80 meter total of 173, and a 160 meter total of 111. This data is for mixed mode contacts.
- ALL TIME CQ ZONES WORKED - This is also basic information and is also for mixed mode contacts. A number like 40-40-31 would indicate 40 zones on 40 meters, 40 zones on 80 meters and 31 zones on 160 meters.

Conclusion - The average subscriber should be able to complete this form in a few minutes.

Please fill out the form and return it to the *Low Band Monitor* as soon as possible. Don't miss out on this one. Our deadline is August 15, 1994.

GENERAL STATION DATA

STATION CALL:	LATITUDE & LONGITUDE:	ELEVATION:	TRANSCEIVER:

TRANSMIT ANTENNA	40	80	160
TYPE - ELEMENTS - HEIGHT *PLEASE DESCRIBE*			

RECEIVE ANTENNA	40	80	160
TYPE - ELEMENTS - HEIGHT *PLEASE DESCRIBE*			

DAYS OPERATIONAL BETWEEN SEPTEMBER 15, 1993 AND APRIL 15, 1994	

RECENT ACHIEVEMENTS

NEW COUNTRIES WORKED FROM: 9/15/93 TO 4/15/94	40	80	160

DXPEDITIONS WORKED	40	80	160
3Y0PI			
9G1XA			
ZD9SXW			
VK9MM			
TI9CF			
V51Z			
ZS9Z			
JW5NM			
T30CC			
VQ9SS			
TOTAL			

ALL TIME ACHIEVEMENTS

DXCC ALL TIME CONFIRMED	40	80	160

W.A.Z. ALL TIME CONFIRMED	40	80	160

SEND TO: LOW BAND MONITOR
P.O. BOX 1047
ELIZABETH, CO 80107

DEADLINE: AUGUST 15, 1994

LETTERS - LETTERS - LETTERS - LETTERS - LETTERS

Lance:

I am exploring an idea that may give a clue to the reliability of the 1.8 mz. path between the west coast of North America and VK4/VK2 during Northern Hemisphere summer. NM7M has written a program based on work by Fricker and Murray that plots the FoF2 contours on a Mercator projection. Plotting the Great Circle path from Pemberton to Brisbane on maps covering the times/dates of the VK4YB, SEANCE net I notice a curious thing. Brisbane and Pemberton are on more or less the same FoF2 line and from each end of the path the signal intercepts a similar succession of lines. Like 3-4-5-6-5-4-3 going from one end to the other. The gradient is different, the lines being much farther apart on the east end. On the east end the E layer is forming as sunrise comes; but on the west end it has been dark for a few hours. I made some transparent overlays with the Great Circle path plotted and have transferred the paths onto the FoF2 map. The map doesn't change much for one hour either way, so you could make an overlay with just the paths and the map corners. Sliding the overlay left or right a quarter of an inch or so would show the situation an hour either side of the time shown at the top of the map (not much change anyway and we know we can talk from about 1100Z to about 1300Z.) The fact that the 3 mhz. line swoops down around the South Pacific and the others loop around inside it (all centered on the sun that is in Asia and north of the equator) makes this an unusual path. I would be interested to know whether your readers know of other paths that have somewhat similar characteristics, whether they show consistent reliability, where they are and at what month and time they work.

Bob. VE7BS

Bob:

The FoF2 map for May, generated by NM7M's software, is shown so that our readers can observe the contours. Those of you that have a DX EDGE™ can place your May transparency over this map as it has been scaled at that size. Bob's address is: Bob Eldridge, Erickson Road, Pemberton B.C., VON-2LO, Canada. He is a regular check-in on the SEANCE SSB net on 1.832 mhz. during the North American Summer around 1100Z.

Lance:

Some notes from our P40GG, "Battle Creek Top Bander" operation in the CQWW 160 Meter CW Contest. The P40GG call was chosen so we could differentiate our suffix from the other stations. We also worked WAC, but missed 6W6JX and made no JA contacts. We also missed A22MN, a VE5, an FY and an LZ that were known to be on the band. We apparently were VK9NS's first Aruba contact on 160 meters. The Pacific region was very thin this year with FK8CP and KH6CC being our best contacts. Looking at a map, it is very tough path from the Australian mainland to Aruba. VK6 is about 180 degrees from P4 and with the Southern Hemisphere Summer there is no short path. The gray line skew oath is quite difficult. VK2 isn't much better! Maybe that explains part of it. Talking with Dick Frey, K4XU, who operated 9A1A, some VK's and Zl's were on and easy picking from Southern Europe. Our longest haul contact was RZ9CWA, 1500 miles east of Moscow on the eastern foot hills of the Ural mountains. Mike, P49I, worked two Ural Russian stations! Conditions were good before sundown, especially Saturday evening. I worked CT3FN at 2215Z, about 45 minutes before darkness. By 2230Z we could hear many of the bigger guns in the Midwest we had worked the evening before, including VE3EJ, KN8Z and W9RE, who were all an honest 599! DX Window hogs made 1.825 mhz. a poor frequency. During the contest, P40O, P49I, and P40GG were all in a row about six miles apart so we had to watch our frequencies. We stayed on 1.824 mhz. as much as possible and worked lots of Europeans there. Our Beverages really helped us manage the intermod. The antenna we took to Aruba is already on it's way south for the VP8SGI DXpedition in January or February.

George, K8GG

George:

Thank you for the details from the Aruba Contest operation in the CQ 160 Meter Contest. Many of our readers worked all of the active stations during the contest with ease. Please keep us posted on any additional "Battle Creek Special" developments.

Lance:

I have been inactive lately but enjoy the newsletter. A number of years ago I had the pleasure of visiting K6UA, who had yagi's and quad antennas on 80 meters. His station performance is amazing! I think that the Half-Bobtail or Half-Square gives you the best performance on 80 meters for your money and it works well supported in trees. Who is the Denver ham with a Four Square array on 80 meters?

Josh, WX7K

Josh:

The Denver ham with the Four-Square on 80 meters is K0KE.

Lance:

Reading the newsletter got me back on 160 meters. Using a DXA Sloper at 90', on March 18 I was able to work my first European, SV8ZS, right at his sunup. I had seen the spots before, but thought that only K1ZM and WB9Z type stations were working him. What a pleasant surprise. Keep up the good work.

John, K0IJL

John:

SV8ZS is a very impressive contact from Minnesota on 160 meters in March. He was heard in Colorado a few times this season, but I am not sure if anyone connected. (AA6TT or K0RF maybe?) Hope you can be active on "Top Band" in December and January next season. Duluth, Minnesota has some interesting propagation potential. You may be pleasantly surprised!

Lance:

I believe that 3Y0PI would have made a lot more 160 meter contacts if they would have operated CW. When propagation conditions are poor CW's superiority over SSB is evident. I would like to see you explore various low band beacons in a future issue as these can be useful to the enthusiast.

Walt, AJ6T

Walt:

I have been looking at a number of 160 meter logs from recent DXpeditions and it appears that the 300 QSO point is a good performance barrier when propagation is compromised. The recent Trindade and Ghana operations that were mostly CW also yielded around 300 contacts on 160 meters during very marginal conditions. If the 160 meter band would have shown promise, I am sure that the 3Y0PI CW operators would have shown more interest. As you know, the band was just awful, and their time was obviously better spent elsewhere. When you consider that the first Peter I Dxpedition in 1987 made only 31 contacts on 160 meters (all CW), the 300 contacts made by 3Y0PI looks very impressive. I am collecting beacons and will try to list them at a future date. Readers are encouraged to send any beacon information to the *Low Band Monitor*.

Lance:

My 160 meter DXCC took 14 years to achieve and some people are speculating that it might be done in a weekend. Times have sure changed! I was able to work 104 countries on "Top Band" in calendar year 1993. The Stew Perry 160 Meter News Sheet was a mimeographed format that was published in a Spring/Summer and Fall/Winter time period during the year. All Stew, W1BB asked for his newsletter was an S.A.S.E. and two first class stamps.

Jack, N4JJ

Jack:

Very pleased to hear from you. I seem to be right on schedule to achieve 160 meter DXCC in 14 years too! You and Bill, W0ZV are probably the unofficial 160 meter champions for 1993. At the 200 plus level you are at the point where only a major DXpedition will provide you with a new country on 160 meters. You have to wonder where Stew Perry would be on the all time 160 meter countries list if he was born a decade or two later. His dedication to the band was amazing.

LETTERS - LETTERS - LETTERS - LETTERS - LETTERS

Lance:

I have been active on 40 and 80 meters for a number of years but am relatively new to 160 meters. Since October 1992 I have 114 countries worked and 92 confirmed from a small city lot. I use a shunt fed tower, 75' high with a TH6-DXX at the top and 4500' of radials, around fifty or so. I radiate a decent signal but have trouble on receive, as there is simply not enough room for Beverage antennas. My best 160 meter catches this season were: A22MN, AH1A, C21/VK2BEX, FK8CP, HF0POL, HZ1AB, T32AF, V73C, VK9NS, VR6BB, ZD8Z, 9G1XA, 9K2MU, 3Y0PI, ZS9A, and V51A.

Greg, KX4R

Greg:

This is exceptional 160 meter performance from a city lot. Most of our readers would be delighted with contacts like this. Thanks for affirming that a shunt fed tower with a good radial system is a good approach to use on 160 meters from a city lot. I hope the needed eight QSL's come quickly as it would be nice to have the 160 meter DXCC milestone completed before next season begins.

Lance:

Please advise your readers that until July 15, my address will be: Gus Gostel, 1905 Smith Farm Circle, Virginia Beach, VA 23455. After July 15 my address will be: Gus Gostel, 2217 Hunters Wood Way, Virginia Beach, VA 23454. Station 9V1XQ will continue to be active from Singapore and is active on the low bands. I am going to be using an HF2-V on 160 meters from the states from a limited space environment.

Gus, K4SXT (9V1ZE)

Gus:

Thanks for all of the 9V1 activity. An HF2-V can be a decent radiator on 160 meters with a good radial system. I have used a helium balloon assisted 1/4 wave vertical from a townhouse location on 160 meters with some success. This approach is feasible (Think Safety!) if there are no overhead service lines near your QTH. I will do an article on this later.

Lance:

I was not on 1.834 mhz. on February 10, 1994. Someone was probably playing with my callsign. I will set up a special schedule for you between 0900 and 1000Z. Send just your callsign a number of times as QSB is fierce.
If we don't make it we will just have to keep trying.

Remi, FK8CP

Remi:

I obviously worked a pirate as the station came right back on the first call. This was my sixth night of listening for the 3Y0PI operation and fatigue here was high. I will keep trying.

Lance:

I live in an apartment building across the street from Central Park in New York City. My antennas are limited to what I can get up on the roof. I am currently using a Butternut HF2V and have been dealing with a roof renovation construction crew that has played havoc with my radial system. When the renovation is complete I am going to attempt a tower and beam installation that will be a complicated project. The 80 meter total at this QTH is 126 countries. I hope to be on the 160 meter band when the tower project is complete and am looking for ideas for 160 meter receiving loops.

Les, K2SHL

Les:

I would think that a simple horizontal receiving loop around the upper perimeter of your building would be worth a try. You are also in an environment where a DSP unit would provide some real utility. David, N2KK related a story earlier about working a lot of DX with a full wave Delta loop hung between two apartment buildings, but that's a bit ambitious for 1994. Have you ever considered guest operating at 4U1UN? You could be a very popular person during a contest weekend!

Lance:

I just want to say that February and March were generally very poor this season on 160 meters. I managed a contact with TL8NG on March 7 for country #207. Unfortunately my goal was 210. March 10, 13 and 15 were exceptional days with ZA1BM being worked on 160 meters by W0CD around 0500Z.

George, W8UVZ

George:

I can't even hook up with TL8NG on 80 meters! I was also disappointed with the propagation conditions on 160 meters this season during February and March. If I would have known that February and March would have been this bad, I would have made better use of December and January.

Lance:

I just found out about the *Low Band Monitor* from SM5EDX and would like to subscribe. Are back issues available?

Lars, SM4HCM

Lars:

Thank you for your interest. We started in April of 1993. Back issues are $2.00 each for U.S. and $3.00 each for DX. Hope to hear you again this winter.

Lance:

I have had a good low band season with some new antennas of note. I have had great success with tuned Beverages with the ground rods connected to a wire laying on the ground parallel to the base of the Beverage. This approach works great here.

Glenn, WA0PUJ

Glenn:

I do feel that you are on to something even though some of the computer modeling types disagree. I have about two acres of mowing left to do and then I am going to try it on my VK/ZL Beverage. I will advise you of the results as I am sure our ground conductivities are probably very different. More on this later. I enjoyed your 3Y0PI input in the Robert Schmieder book describing the Peter I operation.

Lance:

I have been doing a lot of work with my new CD ROM drive and haven't made many spots. The new programs are great, but the complexity interferes with my operating time. I did work SU2MT on February 20 at 0513Z on 80 meter CW around 3.507 mhz.

Al, W8AH

Al:

Thanks for your reports. I have not made the plunge to CD ROM yet. My indecision has probably saved me a few thousand dollars, but I am amazed to see as many as sixty applications on one disk. The SU2MT station has been great for everyone. I hope they can continue their activity for a long period of time.

Lance:

Here are some samples from Internet that you will find interesting. I have mentioned the *Low Band Monitor* to a number of people on the network.

John, W0UN (broz@csn.org)

John:

Thanks for the word of mouth recommendations. I am amazed by people like yourself that have the time and discipline to maintain dialog on any subject on Internet. I am willing, but my rural calling district is a toll call for all of the network services and I simply cannot afford the monthly ($200.00 plus) charges.

Lance:

You have filled a void in amateur radio. I look forward to each issue as much as the multi-colored publications. My interests are geared more to antenna and construction type articles rather than awards. I am hoping to put up a 120' Rohn 45 tower this summer for my low band work and am working on some receiving antennas.

Lee, K0LW (ex: VK2GDV, DA2LW)

Lee:

Great hearing from you again. People don't believe me when I tell them that you once (successfully) repelled off of one of my 120' towers in two leaps or would stand at the top of a tower, bench pressing a Hy-Gain 204BA, in 30 mph wind, and swing it down for bimonthly element "tip" replacement by your assistant below.

Lance:

Things have winded down a bit on the low bands in Iowa, but on June 4 operating 75 meters I heard PP5ZYZ, PP5JD, PY4OY, CX9AU, FO0MIZ, LU8EEM and HC1JOL. VK9NS was also spotted around 1030Z. Two years ago I remember people working VP8ML on 75 meters during the July 4th holiday. His signal would be quite readable then fade out all together. I listened to him until local sunrise and finally worked him and VP8CFM for not one but two new countries. I like to operate during this time of year because the vultures from the east coast usually aren't there and the Midwest enthusiasts in the black hole have a better chance. I considered the past low band season to be excellent. I picked up 22 new 160 meter countries and 25 new ones on the 40 and 80 meter bands. My goals are to be at 200 countries on 75 meters by 1995 and to have 100 countries on 160 meters by 1996. I missed Asia on 160 meters this season or I would have made the WAC. I like the letters and DXpedition coverage that the *Low Band Monitor* provides and look forward to next season.

Clay, WA0GFS

Clay:

You had a much better year than I did. I thought that the propagation to the Northern Latitudes could have lasted a bit longer, but a number of people provided us all with new low band country (T19, V51, T33 and etc.) opportunities. Every time I took a trip I missed a chance to work a new one. I also had three "Sorry - Not In Log" contacts with ZD9SXW, VQ9SS and FK8CP that hurt the old ego. I rate my season as a "C-". I think that most of the true enthusiasts operate sometime during the summer and I do like your logic about the better odds during the static season.

Lance:

Just wanted to tell you that Press, N6SS (at VQ9SS) and I made a good Pactor QSO on 160 meters on April 23 at 2300Z. That must be the first ever Pactor contact between VQ9 and SM. For fun we QSYed to 40 and 80 meters, but the best link we had was on 160 meters! For some reason or other I always have a good 160 meter path to VQ9. Remember this is almost the same distance I have to California, but I certainly don't get that type of path to W6 land. This winter we suffered from noise almost daily from a navigation transmitter in Norway on 1.902 mhz. The QRM was terrible from 1.820 - 1.850 mhz., our entire band, so the only way to operate was to QSX around 1.850 mhz. I haven't heard it for a few months now, so I guess that the problem has been corrected. This spring conditions up here were very poor with lots of aurora and few 80 meter long path openings. There were a few afternoons (USA sunrise), in late December and early January, where the long path turned into short path and U.S. stations as far east as W9 were worked at their sunrise. U.S. 80 meter operators might keep this in mind for next season.

John, SM5EDX

John:

Thanks for the input. I do remember hearing some of the fellows from Minnesota like K0KX and WA0PUJ work you on 80 meter short path back in December at their sunrise and thought that I was witnessing some interesting propagation. I am not sure how many stations worked Pres, VQ9SS on the low bands this season. In twenty operating sessions on 160 meters I never once heard a hint of a signal, but I did hear others apparently work him a few times.

Lance:

I didn't spend a lot of time on 40 meters this year as I only made 237 QSO's with my G5RV at 50'. The 30 meter band is more enjoyable as the DX Hawgs who work DX on 40 meters "over and over" don't seem to congregate there. The 80 meter tally is 145 this season with a Half Square or Half Bobtail. Since January 1, 1993 I have worked 105 countries on 160 meters with an Inverted L at 70', but only 88 "Top Band" countries since the September 15, 1993 date.

Mike, NT4O

Mike:

These are extremely impressive totals. A DXCC on 160 meters in a years time or so with an Inverted L is testimony to the "swampy area in my back yard", you mentioned. Put some of the "goo" in Mason Jars and sell it to the poor souls like me who have no ground conductivity. On a serious note, with a bit of luck you might push the 200 country envelope on 160 meters real soon. Our readers west of the Mississippi are envious.

Lance:

I guess the season as you define it is over although the bands seemed to give up a month earlier. I have enclosed the 80 meter totals showing 145 countries worked since September 15, 1993, or 146 if you count the U.S. A few years ago I would not have thought this would have been possible from this QTH. I did miss the two biggest 80 meter prizes, S21ZG and SU2MT, my last zones. I heard both of them and was in pileups, but fate would not smile. This will provide some incentive for improved antennas for next season. The most satisfying 80 meter contacts were with ZD9SXW, A71CW, 3B8CF and of course 3Y0PI. The 160 meter band yielded 49 countries. Due to my location in a canyon I do not have the usual California advantage to the Pacific. I could hear T20 and T30, but they could not hear me. My 160 meter season was made by the rare European opening we experienced on Christmas week and the 3Y0PI contact in February. The NCDXC DXer of the year, Ted, KA6W, had some interesting twists of fate on 160 meters this season. On February 12th, when many W6 stations had copy on 3Y0PI, Ted had a pole-pig transformer arching in his front yard and could not make the contact. He never heard them again! But Dame Fortune has another face. One night early in April, Ted got up for no apparent reason and went to listen on 160 meters. After figuring out the commotion he made a QSO with 9M0A for country #100 on 160 meters. This was with an "A" Index in the 30's and a "K" Index of 5 or 6. The Boulder Indices don't tell us the whole story on 160 meters.

Garry, NI6T

Garry:

Thanks for sharing the information. I cannot tell you how good a contact ZD9SXW is on 80 meters. I doubt if Roger made more than a dozen contacts west of the Mississippi River on that band. I could never connect with the S21ZG and the special transmit frequency (3.640 mhz. or whatever). For some reason a 1000Z schedule gets old after a few days. Ted's experience has renewed my faith in the DX Gods. I will think about this when I am on one of my frequent low band losing streaks as will our readers.

Lance:

Conditions on 80 meters certainly tapered off after the CQWWDX CW Contest in November. I managed to get my total to 103 as of April 13, 1994 and am currently at 190 confirmed all time. All and all a decent low band season. This year I had a few distractions, as my wife went into labor at 0800Z during the first night of the ARRL DX SSB Contest. Our daughter was born at 2200Z and since then I have been up and around a lot more often than before at odd hours and have worked a few new Pacific stations. I use a 65' Vertical on 80 meters most of the time and have a non-resonant dipole at 7' that I have been experimenting with on receive. I plan to install some 80/160 meter traps this summer to make it resonant. I particularly enjoyed the "travelog" about the N2KK operation. Keep up the good work.

Stew, K3ND

Stew:

Thanks for the low band spots this season and congratulations on the new daughter. Just for fun call your travel agent and ask them to duplicate David, N2KK's DXpedition itinerary for you. This will give you additional appreciation for how amazing this trip was. I have also been experimenting with a 160 meter dipole, for receiving, at 8' above ground. I am going to try to couple a director or reflector to it in a humble attempt at some front-to-back, as soon as I remove about fifty Yucca plants. I had about 20 seconds of my only copy with the A35RK station on 1.827 mhz. with the low dipole on June19th at 1125Z. I am going to do a "shoot out" with the low dipole and one of my "enhanced" Beverages later this summer.

Lance:

I was able to get the all time 80 meter total up to 281 countries this year. I also favor shifting the low band season from September 1, 1994 to April 1, 1995 for next year. There are usually some interesting propagation opportunities in early September.

Fred, K6SSS

Fred:

We received a number of requests to change the dates and I have no problem with this. This will certainly be easier to manage and will allow for a final tally before the Dayton Hamvention™ weekend.

Lance:

I have decided to subscribe to the *Low Band Monitor* after seeing W8JGU's copy. The awards program was the determining factor for me. On 160 meters I am using a single elevated vertical at 105' with the base about 12' above the ground that has two resonant radials. On 80 meters a two element vertical, with half wave spacing, fed either in or out of phase (bi-directional) is used. I use three resonant radials under one of the 80 meter verticals and four resonant radials under the other.

John, K8YSE

John:

Thank you for your interest. I have currently been experimenting with a 160 meter vertical with four elevated radials similar to yours. You were one of the few 8th District 160 meter stations to get into the 9G1XA log so it looks like you are on the right track. I wish you continued success from Ohio.

Lance:

In applying for your low band awards I would like to thank my future wife to be, Elly, for all her patience as I followed the gray-line. She has been a big help to me in my amateur radio hobby. I am using four slopers on the 80 meter band with the feed point at 80' and a Hy-Gain 402BA on 40 meters at 85'. I look forward to your newsletter each month.

David, VK3EW

David:

Congratulations on the outstanding performance on both the 40 meter and 80 meter bands this season. A few years ago amateurs would simply not have thought totals like this were possible from any DX location. We should also note that Australia is in the "static" season during most of this period and that low band DXing is a more difficult task for you than for the enthusiasts in North America. I hope that you and Elly have many years of happiness and good health together.

Lance:

Thought you would like to know that W1AW was using K5FUV's comments about the *Low Band Monitor* as code practice on one of their transmissions. I immediately sent you a check for a years subscription.

Jim, K1MEM

Jim:

Looks like I just had my 15 minutes of fame. Bill, K5FUV was very kind to respond to our press release. I still remember your trip to Kenya and Zone 37 from a few years ago. Your interest is appreciated.

SPOT OF THE MONTH CLUB WINNERS FOR JUNE

WIN AN EXTRA MONTHS SUBSCRIPTION

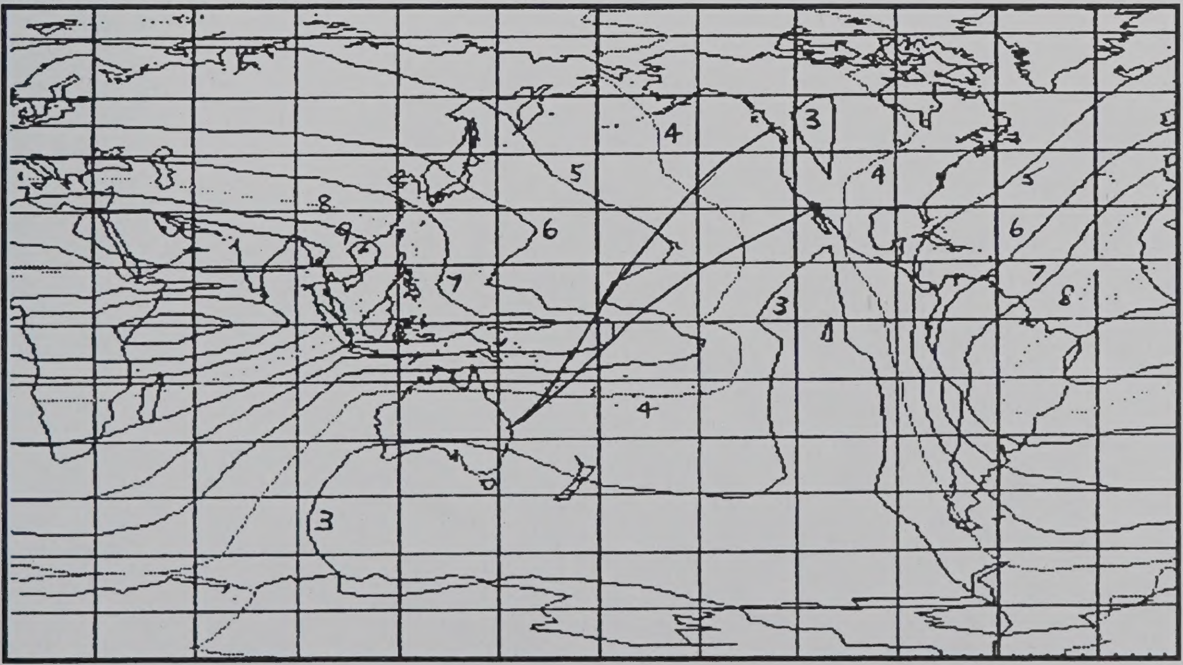
AI6T
A35RK - 1.827 - 1100Z - 13 JUNE
N2KK
9M8FC - 3.795 - 1130Z - 26 JUNE
KY0A
ZM0A - 7.001 - 1100Z - 5 JUNE

SEND YOUR SPOTS TO:

LOW BAND MONITOR
P.O. Box 1047
Elizabeth, CO 80107
(303) 646-4630

May 1.8 mhz. Path VE to VK vs. FoF2 Contours - by VE7BS

SOFTWARE BY: BOB BROWN - NM7M



NOTICE HOW THIS PATH CROSSES AT LEAST FIVE FoF2 CONTOUR LINES. VE7BS WILL BE ABLE TO WORK THIS PATH EVERY DAY FROM MID MAY TO MID AUGUST. SIGNAL LEVELS ON THIS PATH ARE VERY IMPRESSIVE.THE S.E.A.N.C.E. NET MEETS EVERY MORNING IN THE SUMMER AROUND 1100Z ON 1.832 MZ CHECK THIS SSB NET OUT DURING YOUR SUNRISE. LISTEN FOR NET CONTROL VK4YB AND VE7BS.

LOW BAND MONITOR POWER SPOTS - JUNE 1994

TNX: N8HTT - W8TN - N2KK - NI6T - K6SSS - VE7BS - WØZV

160 METERS

1827.0	A35RK	19-Jun-1994	1125Z
1827.0	A35RK	17-Jun-1994	1254Z
1831.0	VK5BC	17-Jun-1994	1248Z
1810.1	FK8FU	17-Jun-1994	1253Z
1827.0	A35RK	15-Jun-1994	1108Z
1827.0	A35RK	14-Jun-1994	1116Z
1827.0	A35RK	13-Jun-1994	1117Z
1827.0	A35RK	12-Jun-1994	1231Z
1824.0	HR1LW	12-Jun-1994	1100Z
1840.0	SV8ZS	11-Jun-1994	0318Z
1832.0	VK4YB	10-Jun-1994	1100Z
1832.0	VK4FO	10-Jun-1994	1100Z
1832.0	VK3IO	10-Jun-1994	1115Z
1832.0	VK7TS	10-Jun-1994	1115Z
1832.0	VK4FO	10-Jun-1994	1130Z
1832.0	VK3AJN	10-Jun-1994	1130Z
1832.0	VK3ALZ	10-Jun-1994	1145Z
1832.0	ZL3AIC	10-Jun-1994	1145Z
1832.0	FK8FU	10-Jun-1994	1200Z
1832.0	ZL4FM	10-Jun-1994	1200Z
1832.0	VK4MZ	10-Jun-1994	1225Z
1832.0	VK6ELL	10-Jun-1994	1225Z
1808.0	5W1GC	6-Jun-1994	0237Z
1832.0	PY4NY	6-Jun-1994	0154Z
1835.0	PY5CC	6-Jun-1994	0146Z
1826.2	ZA1A	29-May-1994	0235Z
1831.0	DK7SU	29-May-1994	0224Z
1841.0	9A1A	29-May-1994	0218Z
1836.5	OL5A	29-May-1994	0200Z
1823.6	9A1A	29-May-1994	0156Z
1832.7	OM7A	29-May-1994	0204Z
1836.5	EM2I	29-May-1994	0137Z
1831.0	UU5J	29-May-1994	0135Z
1839.5	TM9C	29-May-1994	0131Z
1832.6	SM5EDX	29-May-1994	0122Z
1830.0	VK4YB	28-May-1994	1256Z
1828.0	J9AX	28-May-1994	0629Z
1832.6	9H1CG	28-May-1994	0329Z
1826.0	S57DX	28-May-1994	0319Z
1831.3	OK1DWJ	28-May-1994	0315Z
1823.3	9A1A	28-May-1994	0253Z
1839.7	PI4ZLD	28-May-1994	0252Z
1832.8	HG73DX	28-May-1994	0251Z
1829.4	DK7SU	28-May-1994	0250Z
1832.0	VK4YB	25-May-1994	1225Z
1832.0	VK4DJH	22-May-1994	1204Z
1832.0	FK8FU	22-Jun-1994	1200Z
1838.0	ZD8Z	22-May-1994	0431Z
1832.3	G3YRO	22-May-1994	0344Z
1832.0	VK4YB	21-May-1994	1231Z
1832.0	ZL3AIC	21-May-1994	1145Z

160 METER NOTES

Paul, KK6H created quite a bit of interest with his operation from A35RK. He appeared regularly on 1.827 around 1100Z and provided many stations with a new country.

NI6T reports that Paul heard a number of Midwest stations but was unable to complete the exchanges.

Tonga has a 100 watt power limit as do many of the other Pacific islands.

The S.E.A.N.C.E. net is in full session each morning on 1.832 at 1100Z. This SSB net offers the North American station the opportunity to check your Pacific antennas. Those who check in daily can be rewarded with VK, ZL, FK and other exotic Pacific check ins.

Look for the net control VK4YB and VE7BS from British Columbia daily.

80 METERS

3799.0	P29VH	26-Jun-1994	1300Z
3795.0	9M8FC	26-Jun-1994	1130Z
3795.0	9V1XQ	26-Jun-1994	1129Z
3795.0	DU1AK	23-Jun-1994	1245Z
3506.0	SV2BOH	21-Jun-1994	0154Z
3799.0	VR2IH	20-Jun-1994	1233Z
3794.0	SV5DDR	20-Jun-1994	0222Z
3793.9	LZ4AX	20-Jun-1994	0205Z
3503.0	VS6BG	19-Jun-1994	1138Z
3789.0	EA3KO	19-Jun-1994	0410Z
3501.0	UAØDC	19-Jun-1994	1220Z
3501.0	HL9DC	18-Jun-1994	1151Z
3501.0	UAØJB	18-Jun-1994	1148Z
3501.0	RVØF	18-Jun-1994	1138Z
3799.8	ZK1CD	18-Jun-1994	1114Z
3790.0	ZL3SN	18-Jun-1994	1059Z
3799.9	VK3DZM	18-Jun-1994	1056Z
3799.8	VK5PO	18-Jun-1994	1049Z
3799.7	VK6ACY	18-Jun-1994	1046Z
3800.0	HK4DHR	18-Jun-1994	0506Z
3795.0	HK4DHR	16-Jun-1994	1038Z
3504.0	ZL3NE	16-Jun-1994	0944Z
3796.0	LW1EIU	16-Jun-1994	0832Z
3790.0	PY4OY	16-Jun-1994	0826Z
3792.6	HC1XM	16-Jun-1994	0823Z
3796.4	V63BC	15-Jun-1994	1120Z
3789.1	FO4OK	15-Jun-1994	1107Z
3525.3	K0SN/CY9	15-Jun-1994	0327Z
3793.7	I8UDB	15-Jun-1994	0259Z
3799.9	K0SN/CY9	15-Jun-1994	0257Z
3792.1	GJ3YHU	15-Jun-1994	0241Z
3798.0	V63BC	14-Jun-1994	1224Z
3527.0	K0SN/CY9	14-Jun-1994	0255Z
3794.9	ZK1CD	11-Jun-1994	1258Z
3799.0	V63JC	11-Jun-1994	1012Z
3798.0	HJ6SQQ	11-Jun-1994	0726Z
3793.3	EA3NI	11-Jun-1994	0505Z
3788.1	DL3OE	11-Jun-1994	0324Z
3796.5	DK1BE	11-Jun-1994	0318Z
3793.6	F6GSM	11-Jun-1994	0302Z
3798.5	S58FA	11-Jun-1994	0253Z
3891.5	ZL4XXX	11-Jun-1994	0248Z
3895.0	KF8XU	11-Jun-1994	0246Z
3509.0	OZ1CTK	11-Jun-1994	0221Z
3788.2	DL3OI	11-Jun-1994	0217Z
3798.0	S58FA	11-Jun-1994	0206Z
3793.6	LX50V	11-Jun-1994	0201Z
3799.8	D3X	11-Jun-1994	0149Z
3787.6	F6GSM	11-Jun-1994	0112Z
3796.5	9G1MR	10-Jun-1994	2355Z
3794.0	C31LU	10-Jun-1994	2343Z
3799.6	D3X	10-Jun-1994	2335Z
3794.0	C31OF	10-Jun-1994	2325Z
3799.0	UA1ZDX	10-Jun-1994	1406Z
3789.9	PT2ROE	10-Jun-1994	0451Z
3796.4	EA8PP	10-Jun-1994	0355Z
3795.3	HK4DHR	9-Jun-1994	0938Z
3504.3	T91EVC	8-Jun-1994	0232Z
3797.5	TU1ALH	8-Jun-1994	2346Z
3794.4	SP1PEA	8-Jun-1994	0140Z
3799.2	LU8EEM	7-Jun-1994	0944Z
3796.0	KH8BB	6-Jun-1994	1057Z
3790.3	DL3LY	6-Jun-1994	0318Z
3790.0	DL3OI	6-Jun-1994	0244Z
3795.0	YV5FGL	6-Jun-1994	0152Z
3795.0	LA1K	5-Jun-1994	1345Z
3794.9	WH0AAV	5-Jun-1994	1240Z
3794.8	YC2BQF	5-Jun-1994	1225Z
3799.7	A92BE	5-Jun-1994	0118Z
3786.4	YO5ODE	5-Jun-1994	0058Z
3793.1	FO0MIZ/A	4-Jun-1994	0958Z
3505.1	LU2BRG	4-Jun-1994	0939Z
3793.1	FO0MIZ	4-Jun-1994	0546Z
3795.0	CX9AU	4-Jun-1994	0413Z
3505.5	9M8FC	2-Jun-1994	1314Z
3507.0	9M8FC	1-Jun-1994	1301Z
3507.5	A35RK	1-Jun-1994	1058Z
3505.0	ZL2AGY	1-Jun-1994	1020Z

40 METERS

7008.4	JD1/JR1LUX	21-Jun-1994	1421Z
7003.5	ZL1RA	21-Jun-1994	1104Z
7013.0	YC9XR	21-Jun-1994	1034Z
7003.6	ZL1RA	21-Jun-1994	1031Z
7001.5	VK9NS	21-Jun-1994	1019Z
7001.0	CP94USA	21-Jun-1994	0940Z
7006.0	LU1BQU	21-Jun-1994	0925Z
7019.0	EA9UG	21-Jun-1994	0502Z
7002.0	YS1DRF	21-Jun-1994	0428Z
7005.0	3B8CF	21-Jun-1994	0255Z
7008.0	S51FA	21-Jun-1994	0243Z
7003.0	OM5XX	21-Jun-1994	0109Z
7002.0	ZL9RV	20-Jun-1994	0931Z
7001.0	ZL9RV	18-Jun-1994	1206Z
7001.0	ZL9A	18-Jun-1994	1203Z
7000.8	ZL9RV	18-Jun-1994	1038Z
7014.1	HG1S	18-Jun-1994	0206Z
7007.1	BV3BW/4	17-Jun-1994	1314Z
7005.6	BV2BI	17-Jun-1994	1313Z
7008.3	ZL9RV	17-Jun-1994	1153Z
7008.0	ZL9RV	17-Jun-1994	1028Z
7005.6	PT7SY	17-Jun-1994	0403Z
7005.4	G4BUE	17-Jun-1994	0401Z
7009.6	F5IN	17-Jun-1994	0400Z
7006.0	UR4UCD	17-Jun-1994	0214Z
7008.2	LY1DS	17-Jun-1994	0156Z
7006.7	S51DQ	17-Jun-1994	0117Z
7205.0	VK4MZ	16-Jun-1994	0746Z
7026.0	CE6BHI/A	16-Jun-1994	0743Z
7004.0	EI6AK	16-Jun-1994	0633Z
7003.6	EA6ZY	16-Jun-1994	0434Z
7023.8	K0SN/CY9	16-Jun-1994	0432Z
7005.4	G4BUE	16-Jun-1994	0420Z
7004.0	3B8CF	16-Jun-1994	0323Z
7006.5	PY7ZZ	16-Jun-1994	0054Z
7004.5	DL8DD	16-Jun-1994	0051Z
7014.0	CX8BR	16-Jun-1994	0033Z
7003.0	K0SN/CY9	15-Jun-1994	1903Z
7004.0	C56/DK2OC	15-Jun-1994	1900Z
7004.7	V63FC	15-Jun-1994	1209Z
7205.0	CY9/AA9GZ	15-Jun-1994	0706Z
7004.6	EA6NB	15-Jun-1994	0614Z
7008.4	ZL1AMO	15-Jun-1994	0458Z
7007.1	DL9GMM/5N0	15-Jun-1994	0447Z
7025.5	K0SN/CY9	15-Jun-1994	0422Z
7019.5	HL2MXR	14-Jun-1994	1342Z
7002.0	YS1DRF	14-Jun-1994	0441Z
7017.4	CO2CZ	14-Jun-1994	0440Z
7008.0	CO7IHA	14-Jun-1994	0436Z
7002.5	K0SN/CY9	13-Jun-1994	0441Z
7006.2	PY0TUP	13-Jun-1994	0437Z
7007.4	V44KAO	13-Jun-1994	0146Z
7005.3	K0SN/CY9	13-Jun-1994	0001Z
7007.8	ZS6QU	12-Jun-1994	1406Z
7005.4	FK8GJ	12-Jun-1994	1331Z
7004.0	BV2BI	12-Jun-1994	1330Z
7023.4	TO5ORC	12-Jun-1994	0829Z
7004.6	EA9UG	12-Jun-1994	0638Z
7007.5	VK2APK	12-Jun-1994	0633Z
7079.0	9G1MR	12-Jun-1994	0608Z
7006.8	ZV2NP	12-Jun-1994	0600Z
7003.4	K0SN/CY9	12-Jun-1994	0421Z
7016.0	OK1XJ	12-Jun-1994	0317Z
7027.5	CY9/K0SN	12-Jun-1994	0322Z
7003.4	HB0/DA1WA	12-Jun-1994	0313Z
7010.4	HG1SD	12-Jun-1994	0302Z
7007.9	V63KW	11-Jun-1994	1012Z
7005.9	SV1BUU	11-Jun-1994	0253Z
7003.2	ZA1J	11-Jun-1994	0137Z
7006.0	OM3KFF	9-Jun-1994	2318Z
7008.6	C56/DK2OC	9-Jun-1994	2226Z
7002.8	ZL9RV	9-Jun-1994	0956Z
7012.2	YC9XR	9-Jun-1994	0900Z
7003.0	3D2QB	7-Jun-1994	1006Z
7007.1	9J2BO	5-Jun-1994	0508Z
7001.4	FO0MIZ	2-Jun-1994	1107Z
7007.0	A35RK	1-Jun-1994	1342Z
7013.0	FR5DN	30-May-1994	1255Z